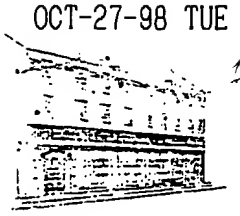

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TO: EXAMINER BRADLEY SISSON (Name) FAX NO.: 1-703-305-3014

USPTO (Company) COUNTRY: USA

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Our Reference No.: 1008/47980

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#18
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Ryncarz, Alexander

EXAMINER: Sisson, Bradley

SERIAL NO. 08/791,240

GROUP: 1630

FILED: 30 March 1997

FOR: Positive Controls in Polynucleotide Amplification

TO: Primary Examiner Bradley Sisson
Fax No. 703-305-3014

LETTER

Further to a telephonic interview with the Examiner on October 26, 1998, the undersigned submits the following proposed claims. The proposed claims are being submitted for purposes of discussion and should not be construed as a surrender of subject matter presently covered by pending claims 1 to 58. Moreover, the proposed claims should not be viewed as indicative of the scope of protection available for the present invention in view of the prior art. Also submitted is a copy of a Power of Attorney executed by Lois Ruszala, Patent Counsel for the Assignee, allowing the undersigned and other attorneys to prosecute this case.

Support for the proposed claims can be found throughout the application including the claims and drawings as filed. The proposed claims are not believed to raise any new matter issues.

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PROPOSED CLAIMS

1. (amended) In a method for forming multiple copies of a target sequence of a target polynucleotide, said method comprising the steps of combining a sample suspected of containing said target polynucleotide with reagents for forming said multiple copies of said target sequence if present and subjecting said combination to conditions wherein said multiple copies are formed, said reagents comprising an oligonucleotide primer and a polymerase, forming extension products of [an] the oligonucleotide primer at least along said target sequence or along an extended oligonucleotide primer template complimentary to said oligonucleotide primer, said extension products being copies of said target sequence, the improvement which comprises forming said extension products in the presence of a second polynucleotide, to which said oligonucleotide primer hybridizes except for the 3'-end of said oligonucleotide primer, under conditions wherein the extension of said oligonucleotide primer along said second polynucleotide is controlled relative to the extension of said oligonucleotide primer along said target sequence.

59. (new claim) A method for forming copies of a target sequence of a target polynucleotide, the method comprising the steps of:

i) combining a sample suspected of containing the target polynucleotide with reagents for forming copies of the target sequence if present, wherein the reagents comprise a polymerase and an oligonucleotide primer capable of hybridizing to the target sequence or the target polynucleotide at multiple sites,

ii) subjecting the combination of the sample and the reagents to conditions sufficient to form copies of the target sequence from the hybridized oligonucleotide primers,

iii) forming extension products from the hybridized oligonucleotide primers, wherein the formation of the extension products is performed in the presence of a second polynucleotide, to which the oligonucleotide primer hybridizes except for the 3'-end thereof, the extension of the oligonucleotide primer along the second polynucleotide being controlled relative to the extension of the oligonucleotide primers along the target sequence.

60. (new claim) The method of claim 59, wherein the target sequence is single-stranded and comprises inverted repeat structures capable of hybridizing to the oligonucleotide primer.

61. (new claim) The method of claim 59, wherein the target sequence is double-stranded and comprises inverted repeat structures capable of forming a stem-loop.

62. (new claim) The method of claim 59, wherein the method further comprises adding a 3' to 5' exonuclease to provide for extension of the oligonucleotide primer hybridized to the second polynucleotide.

63. (new claim) The method of claim 59, wherein the method further comprises adding a modified oligonucleotide primer to the combination of reagents and sample, wherein the modified oligonucleotide primer is at least 90% identical to the oligonucleotide primer and comprises a chemical modification at its 3'-end that prevents degradation.

64. (new claim) A method for amplifying a target sequence of a target polynucleotide, the method comprising the steps of:

i) combining a sample suspected of containing the target polynucleotide with reagents for forming copies of the target sequence if present, wherein the reagents comprise a polymerase, a first oligonucleotide primer, and a second oligonucleotide primer, wherein each of the oligonucleotide primers hybridizes to the target polynucleotide or the target sequence,

ii) subjecting the combination of the sample and the reagents to conditions sufficient for forming copies of the target sequence from the hybridized first and second oligonucleotide primers,

iii) forming extension products from the hybridized oligonucleotide primers, wherein the formation of the extension products is performed in the presence of a second polynucleotide, to which the second oligonucleotide primer hybridizes except for the 3'-end thereof, the extension of the second oligonucleotide primer along the second polynucleotide being controlled relative to the extension of the first and second oligonucleotide primers along the target sequence.

65. (new claim) The method of claim 64, wherein the method further comprises adding a 3' to 5' exonuclease to provide for extension of the second oligonucleotide primer hybridized to the second polynucleotide.

66. (new claim) The method of claim 64, wherein the method further comprises adding a modified oligonucleotide primer in the combination of reagents and sample, wherein the modified oligonucleotide primer is substantially identical to the second oligonucleotide primer and comprises a chemical modification at its 3'-end that prevents degradation.

Respectfully submitted,
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